



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/889,920

07/25/2001

Toshio Asano

520.40381X00

9163

20457

7590

01/03/2005

ANTONELLI, TERRY, STOUT & KRAUS, LLP
1300 NORTH SEVENTEENTH STREET
SUITE 1800
ARLINGTON, VA 22209-9889

EXAMINER

KIM, AHSHIK

ART UNIT

PAPER NUMBER

2876

DATE MAILED: 01/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/889,920

Applicant(s)

ASANO ET AL.

Examiner

Ahshik Kim

Art Unit

2876

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/15/04 (Amendment).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-27,30 and 33-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26,35,38-40 and 42 is/are allowed.
- 6) ☒ Claim(s) 22-25,27,33,34,36 and 37 is/are rejected.
- 7) ☒ Claim(s) 30 and 41 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Amendment

1. Receipt is acknowledged of the amendment filed on October 15, 2004. In the
5 amendment, claims 28, 29, 31, and 32 were canceled, and claims 22-27, 30 and 33-40 were
amended. Currently, claims 22-27, 30, and 33-42 remain for examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
10 obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
such that the subject matter as a whole would have been obvious at the time the invention was made to a person
having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the
15 manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the
claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various
claims was commonly owned at the time any inventions covered therein were made absent any
20 evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out
the inventor and invention dates of each claim that was not commonly owned at the time a later
invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c)
and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 22-25, 27, 33, 34, 36 and 37 are rejected under 35 U.S.C. 103(a) as being
25 unpatentable over Brass et al. (US 6,177,678, hereinafter "Brass") in view of Chappelle et al.
(US 5,412,219, hereinafter "Chappelle").

Brass teaches a non-destructive surface inspection method comprising steps of irradiating the surface with an ultraviolet light on a surface of a specimen on which a magnetic and/or fluorescent particle is applied (col. 1, lines 18+; col. 1, lines 64+). Brass fails to specifically teach or fairly suggest of capturing the image of the surface through camera, and displaying the image on a screen. Brass is also silent about using a green (G) signal component of the image acquired by the camera.

Chappelle teaches a system and the method for determining surface characteristics (see abstract) wherein the image is captured through video camera or camera for image analysis (col. 1, lines 41+). The video camera is further equipped with filter (see abstract). Captured image is analyzed by the color such as blue, green, red and near infrared (col. 4, lines 17+). The wavelength of distinct color such as blue, green, red and near infrared can be considered luminance. Since the image is analyzed by the computer, it can be inferred that the image is displayed on the monitor or appropriate displaying apparatus.

In view of Chappelle's teaching, it would have been obvious to an ordinary skill in the art at the time the invention was made to employ well-known camera to the teachings of Brass in order to store image in semi-permanent manner. Captured image can be later analyzed for various purposes. Use of camera such as video or CCD type in surface analysis embodiment is generally known in the art. Therefore, such modification would have been an obvious expedient, well within the ordinary skill in the art.

5. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chappelle et al. (US 5,412,219) in view of Silva, deceased et al. (US 4,978,862, hereinafter "Silva").

Art Unit: 2876

The teachings of Chappelle have been discussed above. Chappelle fails to specifically teach or fairly suggest that the specimen is illuminated with polarized light.

Silva teaches a method and apparatus for non-destructively measuring surface of an article (see abstract) wherein the illumination system includes a polarizing filter 62 (see figure 5; col. 11, lines 31-54).

In view of Silva's teaching, it would have been obvious to an ordinary skill in the art at the time the invention was made to employ well-known optical filter as part of illumination system in order to correct the illumination beam to correct polarization. Polarization filter serves as a conduit collecting scatter beams and channel them into a target area. Use of polarization filter in optical apparatus, again is a common knowledge to one ordinary skill in the art.

Allowable Subject Matter

6. Claims 26, 35, 38-40, and 42 are allowed.

7. Claims 30 and 41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: the claims are directed at a method of inspecting a deficiency of a surface such as a fault or crack. As shown by previously cited references, applying an ultraviolet light of appropriate wavelength on the surface (on which fluorescent material was already injected or poured on) would cause the dye to fluoresce. Such method is generally known in the art. However, the cited references, taken alone or in combinations, fail to suggest or teach a deficiency inspection method wherein

Art Unit: 2876

chromaticity and luminance of each position of the image is used to detect a deficiency candidate as set forth in the claims.

Response to Arguments

- 5 9. Applicant's amendment and remarks filed on October 15, 2004 are carefully considered. As indicated above, upon careful review, some of the claims are allowed or objected (which can be allowable to be dependent on the allowed claims).

It is the Examiner's opinion that the cited references, taken alone or in combination, still disclose the subject matter disclosed in the rejected claims.

- 10 Applicant argues that the Brass patent or Chappelle do not disclose a penetrant inspection and/or magnetic-particle inspection (See remarks page 13, 1st paragraph). On the contrary, Brass discloses that magnetic particle and liquid penetrant are an essential part of the inspection scheme (col. 1, lines 64+).

- 15 Although Chappelle does not use the term "calibrate", the camera used in determining surface characteristics are equipped to detecting fluorescent emission emanating from the surface, characterizing a spectral content of the fluorescent emission.

The amended claims and remarks describing these elements have been fully considered, but they are not persuasive, and therefore, the Examiner has made this Office Action final.

20

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2876

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ahshik Kim whose telephone number is (571)272-2393. The examiner can normally be reached between the hours of 6:00AM to 3:00PM Monday thru Friday. The fax number directly to the Examiner is (571)273-2393.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee, can be reached on (571)272-2398. The fax phone number for this Group is (703)872-9306.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [ahshik.kim@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.



Ahshik Kim
Patent Examiner
Art Unit 2876
December 23, 2004



MICHAEL G. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800